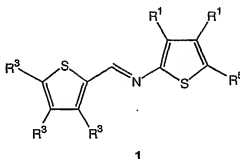


WHAT IS CLAIMED IS:

1. A method for preparing conjugated thiophene-based oligoazomethines of Formula 1:

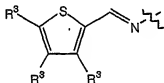


5 wherein:

R¹ is an electron withdrawing group selected from the group consisting of: -CN and -CO₂R², wherein R² is an aliphatic C₁-C₁₂ alkyl chain;

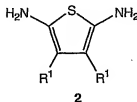
R³ is H or N(R⁴)₂, wherein R⁴ is an aliphatic C₁-C₄ alkyl chain; and

R⁵ is NH₂ or



comprising:

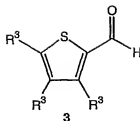
reacting a thiophene diamine of Formula 2:



wherein R¹ is an electron withdrawing group selected from the group consisting of: -

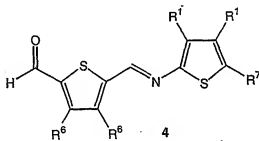
15 CN and -CO₂R², wherein R² is an aliphatic C₁-C₁₂ alkyl chain, with an aromatic aldehyde of Formula 3:

59



wherein R_3 is H or $N(R^4)_2$, wherein R^4 is an aliphatic C_1 - C_4 alkyl chain.

2. A method for preparing conjugated thiophene-based oligoazomethines of Formula 4:

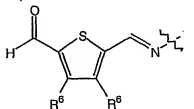


wherein:

R_1 is an electron withdrawing group selected from the group consisting of: $-CN$ and $-CO_2R^2$, wherein R^2 is an aliphatic C_1 - C_{12} alkyl chain;

R^6 is H or an aliphatic C_1 - C_{10} alkyl chain; and

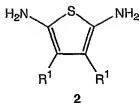
10 R^7 is NH_2 or



comprising:

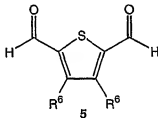
reacting a thiophene diamine of Formula 2:

60



wherein R_1 is an electron withdrawing group selected from the group consisting of: -CN and $-\text{CO}_2R^2$, wherein R^2 is an aliphatic $\text{C}_1\text{-C}_{12}$ alkyl chain,

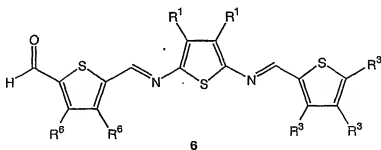
with an aromatic aldehyde of Formula 5:



5

wherein R^6 is H or an aliphatic $\text{C}_1\text{-C}_{10}$ alkyl chain.

3. A method for preparing conjugated thiophene-based oligoazomethines of Formula 6:



10 wherein:

R_1 is an electron withdrawing group selected from the group consisting of: -CN and $-\text{CO}_2R^2$, wherein R^2 is an aliphatic $\text{C}_1\text{-C}_{12}$ alkyl chain;

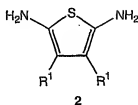
R_3 is H or $\text{N}(R^4)_2$, wherein R^4 is an aliphatic $\text{C}_1\text{-C}_4$ alkyl chain; and

61

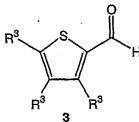
R^6 is H or an aliphatic C_1 - C_{10} alkyl chain;

comprising:

(a) reacting a thiophene diamine of Formula 2:

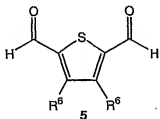


- 5 wherein R_1 is an electron withdrawing group selected from the group consisting of: -CN and $-CO_2R^2$, wherein R^2 is an aliphatic C_1 - C_{12} alkyl chain, with an aromatic aldehyde of Formula 3:



wherein R_3 is H or $N(R^4)_2$, wherein R^4 is an aliphatic C_1 - C_4 alkyl chain,

- 10 (b) reacting the product of step (a) with an aromatic aldehyde of Formula 5:



wherein R^6 is H or an aliphatic C_1 - C_{10} alkyl chain.